



Citation for published version:

Galbreath, D 2014, 'Western European Armed Forces and the Modernisation Agenda: Following or Falling Behind?', *Defence Studies*, vol. 14, no. 4, pp. 394-413. <https://doi.org/10.1080/14702436.2014.961356>

DOI:

[10.1080/14702436.2014.961356](https://doi.org/10.1080/14702436.2014.961356)

Publication date:

2014

Document Version

Early version, also known as pre-print

[Link to publication](#)

This is the submitted version of an article published by Taylor & Francis in *Defence Studies* on 17th September 2014, available online: <http://www.tandfonline.com/10.1080/14702436.2014.961356>

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Western European Armed Forces and the Modernisation Agenda: Following or Falling Behind?¹

David J. Galbreath

United States (US) armed forces are unrivalled in their ability to deliver military power persistently around the world. The future of armed warfare as we know it will be much dependent on what the US and its rivals bring to the table in terms of emerging technologies and the concepts, strategies and tactical operations that follow and use them. From the Revolution in Military Affairs (RMA) to Network Centric Warfare (NCW), US armed forces have steadily evolved towards reconceptualising high-intensity warfare not to mention advances in low-intensity warfare (Counter Insurgency or COIN). RAW, NCW and COIN along with the geo-political shift towards Asia, Africa and the Middle East leave Europe without a definable role in US grand strategy.

At the same time, the role of Europe in the United States' vision of its own national security and the way it conceptualises the world has changed. The United States (US) made a clear signal under the Barak Obama administration that its sense of security and power projection did not encapsulate the Trans-Atlantic relationship that had developed since the end of the Second World War. If we scratch the surface of the George W. Bush administration, we can also see that the US was unwilling to be constrained by Western Europe (or 'old Europe') for the sake of maintaining a good security relationship. Indeed, without the Yugoslav wars, one could argue that the US withdrawal and refocus away from Europe would have occurred earlier, such as that suggested by John Mearsheimer (1990) in his infamous article 'Back to the Future'. Indeed, from Christopher Weinberger² onwards, the US was evolving away from Europe and the so-called 'third generation' that came with it. In as much as Europe remains important strategically, it is as a Rumsfeldian³ 'lillipad' for American power projection to Africa and the Middle East.

The key research question here is how Western European armed forces responding to the US transformation agenda? Are they following or falling behind? *Following* entails a role for European forces projecting military power outside of Europe while at the same time maintaining a stable and secure Europe. Following requires smart militaries, innovative war technologies and changes in how the battle space is conceptualised and engaged. *Falling behind* suggests a Europe unwilling to engage in the wider world, at first militarily and eventually politically. Falling behind leaves Western Europe unable to project outwards or to independently ensure European security independently. Europe's response has the potential to shape global security in the Twenty First Century and thus the consequences of following or falling behind matter for Europe, the US and the World.

The paper examines Western European armed forces particularly in relation to the transformation agenda. The first section looks at how Western European militaries have changed since the Cold War. We pay particular attention to the key drivers of US and European military relations. The second section examines how the

¹ This paper is based on research produced by a grant funded by the Economic and Social Research Council entitled 'The Drivers of Military Strategic Reform in the Face of Economic Crisis and Changing Warfare' ES/K010190/1

² US Secretary of Defense during the Ronald Reagan administration from 1981 to 1987.

³ From Donald Rumsfeld, US Secretary of Defense during the George W. Bush administration from 2001 to 2006.

transformation agenda has impacted UK, French and German forces. We pay particular attention to network centrality, expeditionary forces and effects-based operations and look for transformation in operations, organisations and personnel. The final section concludes by arguing that European forces are more likely to follow than fall behind.

Changes in European Defence

The role of armed forces in Western Europe has changed much since the Cold War. Or at least one would expect. Despite the nature of risks and threats to European national security, many of the militaries we have today do much the same thing they did some two decades ago: remain ready to deploy conventional forces to defend or attack a territorial position. Yet, much of what European forces saw in Yugoslavia, not to mention Afghanistan and (for some) Iraq, many European states remain unsuited for anything other than territorial defence. At the same time, European societies are increasingly unsure of what to make of their militaries. European societies want to see their militaries as a force for 'good'. European governments want to see their armed forces as stabilisers. Militaries themselves on the other hand are concerned with high-intensity kinetic warfare. All of these roles are about force projection. However, they require different sorts of militaries from one another. Finally, and in many ways most importantly, European militaries exist in a larger security community where the United States (US) plays an important role in shaping national interests and arguably even security identities. As the US has repositioned itself towards Asia, European militaries have been asked by the Americans to 'pick up the slack', 'get on board', and 'be ready to play ball'.

While we see changes in armed engagement, public expectations, and the geo-political projection of power, we have to ask to what degree are Western European armed forces able to cope with the post-territorial warfare of the future? Why should we assume that warfare would be post-territorial? Firstly, proximity is becoming less important as power and technology change the way we think about space and time. For instance, the ability to project power far has the potential have ever decreasing costs as human-controlled and autonomous systems become more efficient and less resource heavy. Secondly and most importantly is the decline of defence in favour of security. We can see in Europe especially, there is a decline in what we consider a matter of martial defence though we can agree that some security issues, such as environmental crises, may lead martial responses.

In other words, for good or ill, national and regional security is no longer a factor of the scale of military response, but rather something broader and more encompassing ranging environmental, economic, social and political challenges. For both of these reasons, the need for European militaries is more likely to be implementing security beyond the border rather than the defence of it. For this reason, we can see why West European states put a premium on force transformation. As a result, Europeans understand that there is an impetus for European militaries to change, not only because of budget pressures, but also because of what Europeans want and expect from their militaries is changing. When European militaries think of modernisation and force transformation, the Trans-Atlantic relationship, NATO, and the US Military all play a role as socialisers and ordering from the menu (see Jacoby 2004).

European militaries have deployed in joint operations with the US in and out of NATO in the former Yugoslavia, Iraq, Afghanistan, Libya and elsewhere. The future of joint operations depends on these allies to be able to continue to work

together and, as discussed, this relationship is both empowered and threatened by transformation. This section looks specifically how the US and NATO have tried to influence European militaries through the transformation and modernisation agendas. Following this, we will be in a better position to analyse specific instances of impact amongst Western European forces.

Contemporary force transformation is a result of changes in US thinking on how to plan and execute swift military operations on the 'digitalised battlefield' (Boyer 2004, 75). Transformation is not only about how militaries evolve to fight wars but also is aimed at changing the nature of war itself. As a consequence, as Yves Boyer has shown, European states must understand and in some cases even meet the challenges of transformation (2004). The natural interface between the US and European states is NATO and the transformation agenda has been a part of the NATO agenda since the 1990s but particularly after the George W. Bush Administration in 2001. Yet, questions about post-Cold War interoperability were first addressed in the establishment of the Multinational Interoperability Council (MIC) in 1996. Among the US and its Anglophone allies, naval interoperability was also addressed in AUSCANNZUKUS, otherwise known as 'Five Eyes'. While the MIC and 'Five Eyes' agreement have been important for interoperability, NATO became the vehicle of choice for the US attempts to bring RMA to its European allies.

The ability for West European military powers to respond to US calls for transformation relies on two functions. The first function is the product of transformation as it has emanated from the US. The *Joint Vision 2010* established both a view of technological change in the American military and the scope for implementation throughout the services. Importantly, the document established a joint strategy for implementing transformation.⁴ US transformation relies on 'Full Spectrum Dominance' ready to engage with everything from peacekeeping and crisis management to 'fight to win' scenarios. The document also calls on the greater communication and manoeuvrability between services as personnel, expertise and equipment is shared and distributed across the US military. In 34 pages, *Joint Vision 2010* attempts to formulate a template for force transformation. In terms of our analytical framework, we can see that RMA would evolve the US military to deal with full spectrum operations, greater organisational communication and increased training of personnel towards the use and deployment of ever-increasingly sophisticated technology. As Boyer illustrates, the RMA was 'made in America.'

The second function of force transformation is the ability and willingness of European forces to adapt to this American vision of modern and future warfare. Boyer argues that European allies were 'first intrigued and then 'requested' to adjust their force posture to the shift in military affairs apparently being made by the US' (2004, 77). The launch of the NATO Defence Capabilities Initiative at the Washington NATO Summit in 1999 also stressed upon US allies that change in line with RMA was encouraged. Boyer states, 'the ambitions rapidly faded away, however, and the goals set by the DCI were, for the most part, never met by the Europeans' (2004, 77).

Was NATO the wrong vehicle for transformation in Europe? Boyer points to several constraints. The first is that the US pushed transformation at a time where both NATO and ESDI (European Security and Defence Identity) were in times of change. Following the Washington Summit in 1999 (where the DCI was launched), NATO was being transformed further away from its Cold War roots of collective

⁴ See also the 2001 Quadrennial Defense Review (QDR) at www.defense.gov/pubs/qdr2001.pdf (Last accessed 16 January 2014)

defence in the face of large scale (or total) war. Again, questions were being asked about what role it had to play in Europe, allowing some to say that NATO's existence started and ended with enlargement. At the same time, the St. Malo agreement between the UK and France and the subsequent Helsinki and Cologne European Councils allowed for the establishment of a European Security and Defence Policy (ESDP), though its operationalization would not be sanctioned until the 2001 Nice Treaty.

Secondly, 'transformation' itself was pushed by the US in NATO as more than simply changes in how the alliance prepared and deployed for war. Rather, the transformation agenda appeared to go far beyond this to represent the future of Europe's continued military alliance with the US. Keep up or give up. Much has been written on the so-called capabilities gap between the US and Europe (as it was always thus) (see in particular Binnendijk and Kugler 2007; Coonen 2006; Yost 2007). Not only was Europe being told to keep up, but it was also being told that the rules of the game had changed. The US transformation agenda was taken in military circles in Europe much as it had been taken in much of the American military: as a passing fad. Christopher Schnaubelt (2007) argues that many in the US military were sceptical of why to transform areas in which one was already dominant. Could we expect something similar from European militaries? Perhaps not as a result of outright dominance like the US, but perhaps more in line with the lack of an external stimulus to change.

The final reason why NATO was not fit for the transformation agenda was the breakdown in trust between European governments and the George W. Bush Administration especially in the first term (2000-2004). The unreciprocated European response to the US after September 11 and the subsequent fallout over Iraq are well documented. As Boyer (2004, 81) states "the problem is that these efforts at change and 'Alliance transformation' no longer coincide with an automatically agreed vision of the international scene between the US and many of its European allies." He goes on to say '[NATO's] eminent task is so vague that indeed it authorises every type of action and opens the possibility that the Alliance address every type of problem that could be seen as threatening [its] values' (2004, 82).

NATO's ability to be a transformer of sorts was curtailed in the first instance by changes in the alliance, changes in ESDP and changes in the transatlantic relationship. Yet, the wars in Iraq and Afghanistan have had a much larger impact on the way that militaries think about transformation as modernisation. In the next section, we look at the impact of the US transformation agenda on Europe within new martial, technological and environmental environments.

Transformation agenda in Western Europe

What exactly are we asking our militaries to do? Transformation can be defined as 'a continuous process that shapes the nature of military competition and cooperation through new combinations of emerging technologies, streamlined organisational structures, innovative processes, and adapted personnel developments that exploit national advantages and protect against asymmetric vulnerabilities' (Jasper 2009, 2-3). For Scott Jasper, this transformation meant a move from a 'threat-based model' of defence planning to that of the 'capabilities-based' model.⁵ On this scale, we should be able to see transformation along the lines of operational,

⁵ The 'capabilities-based' approach encapsulated what has been referred to as Effects-Based Approaches to Operations (EBAO). This label is used by Theo Farrell (2008) to discuss transformation in Europe and the UK specifically.

organisational, and personnel changes that exploit technological innovation (2009, 4). Further to what I have stated previously, Jasper argues that transformation is fundamental given the rise in diversity in the sorts of insecurities that face states today, along the lines of non-state actors, rogue states, piracy, collapsed states, etc. This need for transformation follows in line with what Christopher Dandeker (1994) outlined in the early 1990s which is that we are facing an increased amount of constant shift in the international system. These are shifts in power, threat, decision-making, sovereignty and public opinion. All of these shifts impact on the way that militaries respond to events in some way. The diversity of challenges brings us back to a 'capabilities-based model'. With this, we should be able to see the impact of the transformation agenda through operational, organisational, and personnel changes.

In addition to this framework, we need a matching framework that allows us to know transformation when we see it in West European militaries. A good place, though not the only, to start is the 2001 US Military Quadrennial Defence Review (QDR), which laid out transformation in the following way:

- 1) *Strengthening joint operations*: Transformation prioritises speed and flexibility in operations. Speed refers to the start-up resources to respond to an immediate deployment. Flexibility on the other hand refers to the 'scalable' and 'modular' nature of forces 'to allow combatant commanders to draw on the appropriate forces to deter or defeat an adversary' (2001, 32). Further on, the QDR refers to the practical applications of this: 'US forces require the ability to communicate not only with one another, but also with other government agencies and allies and friends' (2001, 33).
- 2) *Experimentation on the ways of war*: The QDR set out ways in which transformation could be tested in the battlespace. The document has a heavy focus on the role of exercises, war-games and simulations in addition to experiments. Important for us here is the extent to which Iraq and Afghanistan acted as live experimentation spaces. For US military, of particular interest was experimentation with ways to control space, which means both C4STAR and engagement (2001, 37).
- 3) *Exploiting intelligence advantages*: Transformation included rethinking the way data would be used in intelligence and engagement. Of particular interest here is the US military Tasking, Processing, Exploiting and Dissemination (TPED) system (2001, 40). The system is a combination of intelligence forms (HUMINT, SIGINT, etc) used to inform and enhance integrated command infrastructures (themselves part of the transformation agenda). The effects of maximising intelligence advantages can be seen also on the ground in the battle space with the increased use of situational awareness displays.
- 4) *Developing transformational capabilities* (p.40): Herein lies the clearest sense of a military in transformation. These new transformational capabilities are a list of thinking about how to collect and process data faster, cover space faster, and be flexible and respond faster. These transformational capabilities are directed towards defending bases as well as maintaining a presence in anti-access and area-denial environments.

For our purposes, we will look at the following as indications of this transformation, as laid out above: 1) network centricity, 2) expeditionary forces, and 3) effects-based operations. These transformative capabilities have had considerable impact on the US military as dictated by the literature and tactical operations in Iraq

and Afghanistan. An important part of this revolution, as indicated, is the technological advances and edge that the US has had over potential enemies. The major problem that cannot be resolved here is whether this technological transformation is changing the nature and character of the battle space itself. Nevertheless, we can get an idea from this list of how transformation might look if adopted by European militaries. Naturally, we do not expect that an American version of transformation will transfer directly to European forces. However, privy to much of the same doctrine and technology not to mention having fought one, and in some cases, two wars with their American ally, we should expect some degree of transformation in West European militaries.

The American approach to RMA or what we know today as transformation and even in some cases as modernisation has been discussed often in the literature (for instance Morgan 2000; Cohen 2004; Hamilton 2004; Hoffman 2006; Farrell and Rynning 2010). In fact, the discussion about changes in the US military go even further back, yet they do not need a review here. The key is that the changes in the US military around operations, organisations and personnel and how these have been affected by changes in strategic doctrine generally and advances in science and technology more specifically are a point of interest and concern for European forces, particularly because of the disparity in resources and posturing between the US and its transatlantic partners in and out of NATO. Our goal is to see how the US has shaped Western European forces. Our analytical framework looks at the UK, France and Germany across how operations, organisation and personnel have changed as a result of (changes in) network centricity, expeditionary forces and effects-based operations. The result of this study can be seen in Table 1.

Table 1: Snapshot analysis of force transformation in Europe

	Network Centricity	Expedition Forces	Effects-Based Approach
Operations	<p>UK: Iraq, Afghanistan, NATO Joint exercises, close US support</p> <p>France: Afghanistan, <i>Operation Nemausus</i>, NATO exercises</p> <p>Germany: AMN, Thales system</p>	<p>UK: Iraq, Afghanistan, Army 2020 programme, FRES (delayed), resource poor</p> <p>France: Afghanistan, Francophone Africa</p> <p>Germany: Limited application in Afghanistan</p>	<p>UK: Iraq, Afghanistan, NATO Joint exercises, diverging from US approach</p> <p>France: Afghanistan, Stabilisation operations, <i>Kapisa mission</i></p> <p>Germany: ‘Three block warfare’ focus</p>
Organisations	<p>UK: NEC, Joint Doctrine and Concepts Centre, Bowman CIP, Skynet 5</p>	<p>UK: TRACER and MREV programmes ended, MRAP replacement</p>	<p>UK: JDCC/DCDC, Permanent Joint Head Quarters, Comprehensive Approach, Tactical Conflict</p>

	<p>France: NEB (digitisation), SICAT, SIC21, 'C4ISR On-the-Move'</p> <p>Germany: <i>NetOpF</i>, NEC, Transformation Coordination Group, SATCOMBw2, MobKommSysBw</p>	<p>France: Model 2014, consistent Army budget (joint services) Scorpion, SCF, BOA</p> <p>Germany: <i>Konzeption der Bundeswehr</i> (2004), <i>Eingreifskraefte</i>, modularisation,</p>	<p>Assessment Framework</p> <p>France: EFR, DGA/Army split,</p> <p>Germany: Bundeswehr Transformation Centre</p>
Personnel	<p>UK: DII training and refit, 12 Mechanised Brigade (Iraq)</p> <p>France: Limited</p> <p>Germany: Limited</p>	<p>UK: Strategic doctrine development via Lessons Exploitation Centre (LXC), filtered into COIN</p> <p>France: ground manoeuvre brigades, <i>Félin</i>, HOBOT</p> <p>Germany: ISAF high/low intensity mix, skill set change</p>	<p>UK: refitted for a commander –led culture, 52 Brigade-Musa Qala</p> <p>France: PP30, CD&E</p> <p>Germany: Limited</p>

While taking part in numerous military operations since the end of the Cold War, European militaries have been overwhelmingly fit for fighting Cold War operations. Whether from large-scale mechanised infantry or submarine hunters, European militaries were overwhelmingly fit for engaging the Soviet Union and its allies in a regional if not global war. The ability for European militaries to evolve away from this has been discussed in the literature in detail. If we look for example at the level of military spending by the UK, France and Germany, not in comparison, but over time, we can see that Germany dramatically reduced its overall defence budget and number of personnel.⁶ The UK and France did see some reduction in defence budgets though these were temporary until around 2010 when they began to decline again. The ability for European militaries to make a discernable shift in how they engage asymmetric warfare, that which has become most common in the post-Cold war period, however has been slow.

⁶ See the Stockholm International Peace Research Institute military expenditure index <http://www.sipri.org/research/armaments/milex> (Last accessed 20 Jan 2014).

Network Centricity

The transformation agenda in the US started, as Colin Grey (1981) would have guessed, with a focus on technological advances.⁷ The nature of how technology could make militaries more flexible and responsive was especially appealing to early strategic thinkers such as Admiral William Owens, Vice Admiral Arthur K. Cebrowski and others. Network centricity became an important part of the US transformation agenda and subsequently a corner-stone to NATO transformation efforts. The notion of Network Centric Warfare is one of networks over platforms. Where platforms are preformed WYSIWYG (What You See Is What You Get) units that serve specific operational functions, networks are intended to inform operations in real time to allow for greater responsiveness and aptitude. Network centric theory, as it is, goes beyond that which we talk about here today (see *In Athena's Camp – Preparing for Conflict in the Information Age* 1997; Barnett 1997; Alberts, Gartska, and Stein 1999; Dahl 2002). More importantly, we seek to see how networks have become a part of transformation of European militaries in strategic and operational terms.

The three militaries under observation came to network centricity at different times though all taking the concept from the US. As we shall see, network centricity was product of the US transformation agenda in and around NATO. The UK, France and Germany were affected by the US concept of NCW through bilateral coordination, institutionally in NATO and also by socialisation. Later, combat experience would play a major role in bringing networks to the fore for those operating in Iraq and Afghanistan. Being the most closely aligned with the US, there was considerable openness to military ideas from across the Atlantic (Farrell, Rynning, and Terriff 2013, 184–5). As the US and UK were headed into war together in Iraq in 2003, the UK defence establishment was consolidating its approach to NCW. Where NCW amounted to thinking of war and operations differently, the UK was more constrained in its approach. The concept of Network Enabled Capabilities (NEC) was the British approach to network centricity. That change from NCW to NEC can be seen as the result of brakes being put on transformation, particularly in the British Army. 'Two core British Army interests-organisational autonomy and size-were under assault during this period' (2013, 184). At the same time, concerned with their relationship with the US military, the UK military maintained an emphasis on network centricity even as the Army was being scaled back. '...it is to their tempo of deployment that the UK must aspire'⁸ As we shall see, the status of the Army in Europe, as it was in the US, would be a major factor in the take up of transformation concepts.

The UK MoD took NEC as important feature that characterised the development of the military (and in particular the British Army). The creation of the Joint Doctrine and Concepts Centre (JDCC, later the Development, Concepts and Doctrine Centre DCDC) following the 1998 SDR is an illustration of how a shared programme of NEC would influence the implementation of network centricity in operations. The JDCC was an important organisational shift for the progress of NEC to take hold. The centre also reflects its US equivalent. The application of NEC in the field is inherently related to our next sections, especially effects-based approaches to operations. However, we can see how NEC shaped personnel through Defence

⁷ In this article, Colin Grey points to the important cultural attention to technological progress in American strategic culture.

⁸ See the *UK Joint High Level Operational Concept*, Joint Doctrine and Concepts Centre, 2003, para. 704 <http://ids.nic.in/UK%20Doctrine/UK.pdf> (Last accessed 24 January 2014).

Information Infrastructure (DII) training and the related equipment refit. This change in operations can be seen in the deployment of the 12 Mechanised Brigade in 2005 as the first brigade in HM Forces to bring the Bowman CIP system into service.⁹ British forces have been at the forefront in Europe of introducing network centrality, though as we shall see France has not been far behind and in many ways is moving ahead.

France came to the concept of network centrality more slowly, though they diverge on what has been accomplished. The French approach to transformation came about in the mid-1990s with a change in government and the introduction of the 'Model 2015' military. With a model in hand, there were still considerable problems of professionalization and strategic thinking that needed to be done before transformation could take hold. In the late 1990s though, NATO began running Multinational Digitized Interoperability Exercises (MDIEx) aimed at testing networks in combined and joint environments.¹⁰ According to Farrell, Rynning and Terriff, 'these exercises...sparked new thinking in France' (2013, 220). The result was the French Army's *numerisation de l'espace de bataille* (NEB). 'NEB was new because it went beyond – below – the level of strategy and envisaged the operational and tactical integration of forces in one overarching information system' (2013, 220). The French defence armaments procurement agency (DGA) established the PP30 programme for modernising the military. The French Army came away from the modernisation experience with a need to create NCW within and developed SICAT (*Système informatique de communication de l'armée de terre*). SICAT was '...quite reasonably [...] suited to the Army's operation needs as opposed to technological or industrial imperatives...the problem was that SICAT did not communicate outside the Army' (2013, 222). In other words, the French Army network was smaller than operationally necessary. For France, a major brake was the tension that existed between the DGA and the Army, where the former wanted to design and build out of what the latter thought best to fight. As we shall see further in the effects-based operations section, the story (and progress) does not stop here.

Unlike the UK, there was no direct pressure from either side for Germany to follow the US lead in NCW. The German Bundeswehr was aware of the introduction and use of information technologies in the US, for the same reason as the French, through NATO programmes and exercises. However, the German response was quite different. The first major mention of network centrality was in the 2006 Defence White Paper.¹¹ From this introduction, we get the establishment of the *NetOpF* protocol that, relying on the US characterisation of network centrality, lays out a future unveiling of Network Enabled Capabilities (NEC) throughout the Bundeswehr. Ina Wiesner highlights how network centrality was introduced in Germany as based on the US notion of NCW but was 'holistic and intellectual in nature' (2013, 114). The German approach to network centrality is Network Enabled Capabilities (NEC). Where in the UK and French, as especially the US cases, the German military linked NEC specifically to effects. In other words, where the US sought to change the way specific functional operations looked and were used in the battle space, NEC was a way to enable 'jointness and combinedness' (2013, 116). The lofty role of NEC itself says something about the lack of implementation of network centrality in the

⁹ The 12 Mechanised Brigade began training with the Bowman system in 2003. See <http://www.army.mod.uk/structure/29026.aspx> (Last accessed: 27 January 2014)

¹⁰ See <http://www.eur.army.mil/exercises/> (Last accessed: 24 January 2014)

¹¹ See the Defence White Paper at <http://www.isn.ethz.ch/Digital-Library/Publications/Detail/?ots591=0c54e3b3-1e9c-be1e-2c24-a6a8c7060233&lng=en&id=156941> (Last accessed 24 Jan 2014).

Bundeswehr. Integration in the Bundeswehr is relatively poor in comparison to our other countries studies. Where the US, UK and France have all established joint command structures, the German MoD has had a long history without core competencies in this area (see Young 1996). As a result, coordination and even vital delegation of the NEC programme was lacking, though the Bundeswehr Transformation Coordination Group would wish it otherwise. Wiesner states 'between 2000 and 2005 the Bundeswehr Chief of the Armed Forces Staff and the Armed Forces Staff did not have the necessary authority over the other services, let alone the civilian directorates in the Ministry to direct NEC conceptualisation' (2013, 117). Most importantly, many of the drivers that we see in the UK and French cases, such as a 'special' relationship with the US, global position, or vested interests in defence industries, are not present in the German case.

While the US concept of network centricity had taken its different tones in the UK, France and Germany, combat operations would have a crystallising effect on the implementation of network centricity in the battlefield. The UK worked with and next to American soldiers both as special and conventional forces in Helmand province. Interoperability with the US was a vital function of that combat relationship. The UK has been able to use its NEC systems, such as Bowman CIP and Skynet 5 in operations. The French have also used Afghanistan as a way to deliver NEB through the use of SICAT and 'C4ISR-on-the-move'. The French military were already showing their use of network centricity in 2004 in Operation Nemausus as part of a peace enforcement exercise (Rynning 2010, 66). In Ivory Coast and latter in Afghanistan, the French military used fully networked deployments to their advantage in the battle space. Though a slower start, Germany too has implemented some degree of network centricity in combat operations. Two programmes that have made this easier are worth mentioning (Wiesner 2013, 121). The first is SATCOMBw2 which saw the launch of two military community satellites in 2009 and 2010. This programme meant that the German military was less reliant on commercial satellites for broadband. MobKommSysBw initiated around the same time offers tactical data transfer across the network. All three of the cases studies were impacted by the launch of the Afghan Mission Network (AMN) established by the US to improve communications within ISAF. In 2010 when the German MoD could not provide a ready interoperable communications and information systems (CIS) solution, they responded by leasing the 'off-the-shelf' FOC+ system developed by the Thales Group. Wiesner explains: 'This decision was spurred by the announcement of NATO HQ to deploy two US brigades to the Regional Command North, which was under German command.' The lesson is that when the Americans come to join you, interoperability is a must.

Network centricity has been an important development for nearly every major military in the world. The Western European militaries discussed here have used it as a way to augment the way they collect and share information in the battle space as well as how they cooperate and coordinate with others. One of the major features of this development is the impact that it has had on equipment. In many ways, equipment links us to the next session. At the same time, we should avoid spending too much time on it here as it sits outside the scope of this essay. More importantly, the US impact on transformation through their own concept of NCW has been important and is inherently linked to the way we think about expeditionary forces and effects-based operations.

Expeditionary forces

As Secretary of Defence, Donald Rumsfeld had said that he wanted a ‘leaner, faster, meaner’ military. Yet, the move to make the US military ‘meaner’ and ‘faster’ (at least) started much before Rumsfeld took office, as we have seen already. The move to be faster and more responsive was an important element to the US transformation agenda. As US forces began to question how to master time and space in warfare, the role of expeditionary forces as rapid reaction, full spectrum forces rose again in interest that it had not seen since before the Second World War. The US focus on expeditionary forces built on a common martial heritage with European militaries. This shared history as well as a similar realisation of the changing character of the operations European states would take part in gives us reason to look at how the US transformation agenda influenced the UK, French and German forces. The key features of expeditionary forces in our cases are weight, resources and modularity as we look across operational, organisational and personnel effects.

The 1998 SDR in the UK set in motion a rethinking of how UK forces could respond to national and global security crises.¹² Coming out of the wars in the former Yugoslavia, the focus was how to get forces in and out quickly. The focus in the US would be rethinking firepower: ‘meaner’. In the UK, the focus was less on lethality and more on deployability on a faster time-scale.¹³ The MoD continued a programme of establishing joint c Following the SDR, the MoD began on a medium-weight force that could be quickly deployed in a Yugoslav-type conflict on a quick basis. The programme was the FRES UV/SV. The US military had kitted their forces out with Stryker vehicles that could be quickly deployed and could withstand the risks in Iraq and Afghanistan. While the British Army was primarily fighting a budgetary battle while undergoing the greatest downsizing that it had ever seen, the conundrum became finding a vehicle that could suit forces while at the same time being generic enough to be used in a greater range of operations. The FRES programme was designed to do just that. Furthermore, the selected vehicle would need to be ‘bowmanised’ (equipped with CIT systems) to support NEC in the field. The move to properly equip expeditionary forces has continually been thwarted, with the end of the TRACER and MREV programmes, hunt for MRAP (Mine Resistant Ambush Protected) replacements and further delay of the FRES programme. The hunt for a medium-weight, quick response force still is in need, though counter-insurgency (COIN) operations have dampened the demand for one. Even strategic doctrine development from the Lessons Exploitation Centre formerly aimed at expeditionary forces has become much more engaged with COIN. More recently, the Army 2020 initiative sets out a new, smaller, more responsive (it is hoped) British Army that would be able to provide the type of forces required for expeditionary missions. The key question is whether budgets will trump strategic necessity in the future. We will return to this further in the conclusion.

The French Army has a long history of expeditionary forces, owing to their colonial and post-colonial military operations in Africa. As the Cold War needs of heavy artillery and mechanised infantry decreased, the French Army saw a new lease in expeditionary forces. The US transformation agenda and its focus on rapid-reaction, responsive forces was an important driver in this thinking. At the same time, France did not take part in NATO military committee but nonetheless followed the Strategy Review Group. Ministers even joined NATO ministerial meetings from 1995. A year prior, the 1994 Defence White Paper ‘Model 2015’ called for a greater utility of

¹² See www.parliament.uk/briefing-papers/RP98-91.pdf (Last accessed 20 Jan 2014).

¹³ Incidentally, the value of expeditionary forces comes to the fore if one reads on the conditions of the British response to the Argentine invasion of the Falklands.

expeditionary forces, responding to the French participation in the crisis management operations in the former Yugoslavia (Farrell, Rynning, and Terriff 2013, 209). Rather than 'leaner and meaner', the French military saw expeditionary forces as being a broader platform of engagement that could deal with anything from kinetic operations to 'military operations other than war' (MOOTW).

The development of expeditionary forces, as elsewhere, was partly determined by strategic objectives and military political economics. Unlike its British counterpart, the French Army was doing well in terms of budgets in relation to the other services. If transformation were to happen in the Army, it would have to pay for it. The result was the iteration of the NEB as discussed earlier as well as new programmes. Concentrating on the need to be fast and flexible, the French Army established new ground manoeuvre brigades capitalise on medium to light weight equipment and modularity where by specific functions 'plug' and 'unplug' depending on the nature of operation. Furthermore, the *Félin* combat system sets to remake the French Army soldier through the kit that he/she carries. Félin is a set of networked equipment 'enhancing his information level, vision, protection and ability to shoot without exposing his body' (2013, 260). In this sense, the system represents an exoskeleton which can be cumbersome for conventional combat infantry to withstand on a prolonged basis. The Félin system is also being used in other militaries (e.g. Australia). The science and technological advances of materials may make the unit less cumbersome over time. Nevertheless, the important point is that this system along with the HOBOT (homme robot) programme tells us about the converging nature of transformation in the French and US cases where fire power, flexibility and intelligence are being maximised at the cost of more traditional tactics.

Unlike the UK and France, Germany has taken much less away from the US transformation agenda around the case of expedition warfare. Beyond German special forces, expeditionary concepts and approaches have been lacking on the ground. Where Iraq and Afghanistan have been important for experimentation of transformative concepts and technologies, Germany has restrained for a series of reasons to do with domestic politics, military culture and the perspective on future conflicts (see Dyson 2005; 2011). Some degree of expeditionary thinking has occurred at least in the conceptual phase. For instance, the *Konzeption der Bunderwehr* in 2004 set out the need for the Bundeswehr to be responsive to a 'third block strategy', building on the US military notion of multiple operational needs in theatre. Furthermore, through the *Eingrieffskraefte* units have been established to act as fast response intervening troops that could be defined as proto-expeditionary units. Beyond this, modularisation remains a priority for the Bundeswehr as it perceives being responsive for various forms of operations, not all being kinetic. Like our other case studies, the framework for expeditionary forces is coming into place for Germany. The key difference, as Tom Dyson illustrates in his work, is the lack of will and structure for making such strategic decisions.

While the nature and implementation of expeditionary forces varies across case studies, we can see an impact from the US transformation agenda. Many of the US conceptual programmes of the 1990s have been made their way through to the UK, France and Germany especially as part of modernisation as well as combat experience particularly in Afghanistan. 'If Europe emerges with smaller border-defence forces but far better expeditionary strike forces, it will have gained hugely in the bargain' (Binnendijk and Kugler 2007, 129). Importantly, discussing network centricity and expeditionary forces requires us to engage with how these militaries have attempted to internalise effects-based approaches to operations. To this we turn our attention.

Effects-based approach

The notion of effects-based operations (EBO) was a way to ask the question of what do you want out of a military operation? From this broad perspective, EBO in the American sense came to be used for a variety of approaches in our three case studies. In the US, EBO challenged the US Army to think and deliver differently. Originally a US Air Force concept, EBO was applied in the military as a way to transition away from large regimental platforms fit for defending Western Europe against a Soviet invasion towards a 'leaner', 'meaner' and more flexible response to full spectrum operations (in other words, how to make the army still relevant in modern warfare). With the wars in Afghanistan and Iraq, EBO became more than simply remaking the soldier into a all-around soldier but encapsulated the wide spectrum of duties that came with military intervention in these states. For the US, this meant tailoring ground operations to match the ends, which meant ranging from state building to COIN to open kinetic warfare. The crux of the US approach to EBO has been the joint and combined nature of operations. European militaries also used it especially in the armies and applied it to their own combat experiences.

The UK sought to use EBO as a way of revising a holistic approach to military operations. While beginning with the US approach to EBO, the UK JDCC/DCDC led the way in fashioning a British approach to EBO (Farrell, Rynning, and Terriff 2013, 145). When it came time to test the concept in a joint exercise in 2005 (Joint Venture 5), the coming together of services resulted in an overly complex command structure. In a 'British culture of mission command', the JDCC quickly replaced EBO with a more British 'effects-based approach to operations' (EBAO). 'The EBAO was recast as a 'way of thinking' about planning and operations, rather than a hard and fast science as suggested in US doctrine on EBO' (2013, 145). Furthermore, EBAO was recast as a way to improve the relationship between the military and other government agencies (i.e. 'joined-up government'). The now DCDC put EBAO in place as a philosophy of operations rather than a rule book. From this point, we get the 'comprehensive approach' which we will see in France and Germany as well. The comprehensive approach set out to encompass the multitude of political, economic, social and military objectives in the battle space. For the UK military, network centrality and expeditionary forces were key to EBAO in as much as they were the tools by which the military would use in the field to engage with this more complex, comprehensive approach. The tensions within the way the UK approached EBAO in Iraq and Afghanistan are many and are work investigating, but set outside of our study. The key issue to take forward is that the US concept of EBO was worth adopting in the first instance, but quickly needed to be nationalised in the face of politics and resources in the military and government.

The French relationship with the US, poor as it was, impacted on the nature of transformation in that socialisation and coercion did not influence France in the same way it might have done other full NATO countries. The French Army saw in the US transformation agenda an opportunity to remake themselves following the end of the Cold War, much in the same entrepreneurial spirit as the British and German armies. The key difference however is that the French Air Force and Navy had less communication with the US and less reason to seek joint operations with one another or with the Army. As a result, French EBO thinking began with a lack of the 'jointness' that our other case studies experienced. While France continued to reach out to NATO, and eventually re-join, French transformation was about rethinking the use of force but not necessarily simply importing US ideas about modern warfare.

Where the US had EBO and the UK EBAO, France has a 'synergy of effects' which can be found rooted in the French martial thought from Antoine-Henri Jomini onwards. With the connection between NEB and expeditionary forces with EBAO confirmed in the UK case, it is little surprise perhaps that the '...synergy of effects is an outgrowth of the information technology inherent in NCW and the mobility inherent in expeditionary warfare...' (2013, 240). Needless to say, when we return to the divisive relationship illustrated around NEB of the tension between the DGA and the Army as well as the Army and the other services just mentioned, we can see a challenge to the implementation of EBO in France. More recently, the needs for joint command operations (or coherence) have been more fully recognised, such as in the PP30 transformation process, perhaps under the return to NATO and experience in Afghanistan and in CSDP missions in Africa.

Finally, Germany's relationship with EBO was perhaps the most limited. Tom Dyson (2011) illustrates the internal, structural reasons why the US concept of EBO had less traction in Germany. The key reason for its articulation in the military is the lack of a joint command responsibility within the Bundeswehr that could have made the process. Referring to what they label 'effects-based thinking', the previously introduced concept of 'three block warfare' represents the limitations of EBO in the Bundeswehr. German doctrine, such as that coming out of the Bundeswehr Transformation Centre, has not taken EBO further despite NATO influence and Afghanistan experience. In as much as EBO has influenced German military doctrine, we can see a casual assumption that the Bundeswehr has been doing effects-based thinking all along. The result is a limited impact on operations, organisations and personnel.

Conclusion: transformation or adaptation?

We began with a question of whether West European forces were following or falling behind. The previous analysis suggests that in as much as the US transformation agenda is an important driver of force transformation in Europe, there are many impediments to internalising American military concepts into domestic military contexts. Taken together, network centrality, expeditionary warfare and effects-based approaches make for a tidy understanding of transformation as befitting the US agenda. While we have talked about them separately here, and they have different champions and constraints in reality, they are in fact very closely connected as illustrated in the US QDR that started us off. American influence has been active through NATO as well as through combat experience in Afghanistan and (for the UK) Iraq. Currently, the role of transformation in Europe is as much hemmed in by budgets and political willingness as it is about strategic narratives of transformation coming from the US (see Strachan 2013). Based on this and the study here, the conclusion is one of following rather than following behind.

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